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**AUTHOR** Taylor, Robert S.  
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## ABSTRACT

A frame of reference is needed in educating information professionals to grow and be effective in the future. Information professionals need sensitivity to information, its organization, and technological impacts on society, as well as the abilities to diffuse information and perceive analogy across the information field. Six subject areas to guide in curriculum design are suggested, based on the assumptions that librarianship is part of the whole information structure, not tied to an institution, and that attention to users and their needs should be encouraged: (1) information organization and retrieval; (2) the information environment; (3) information media; (4) systems and technologies; (5) research methods; and (6) management. Information organization and sources must relate more to information seeking processes and utilization. Typologies and taxonomies of information transfer, agencies, users, and needs must be developed. The organization of visual, aural, and linguistic messages must be studied. Information professionals need the abilities to analyze, design, and evaluate operating and potential systems; to critically evaluate research results; and to effectively develop and conduct research. Management--concerned with human behavior and organizations--links these areas. An attitude change is needed by information educators and professionals to break from the library as an institution and seek alliances with other fields. (KP)

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Reminiscing About the Future: From  
Librarian to Information Professional (1)

Robert S. Taylor  
School of Information Studies  
Syracuse University

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Reminiscing About the Future: From  
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Robert S. Taylor  
School of Information Studies  
Syracuse University

A portion of the title of this talk is taken from William Jovanovick's remark that "Americans are given to reminiscing about the future." And we are talking about the future for that is what education - professional education - is all about. The purpose of the schools whose representatives are assembled here under the rubric of AALS is to educate professionals who will be working in, designing, evaluating, and managing information systems and services in the last quarter of this century and into the twenty-first century. Now this doesn't mean that our graduates are prepared to participate in major ways or to make major contributions to the solution of information problems twenty-five years from now. Rather the intent of this paper is to suggest a frame of reference, within which we can educate professionals who can grow and be effective in the future. Among the kinds of attitudes and abilities they should have are -

- a sensitivity to information, its organization and its technologies, and the impact of those technologies in society.

- an ability to see oneself in the role of linkage agent for the diffusion of knowledge and information, regardless of where one works.
- an ability to act as a change agent where and when the opportunity arises, realizing that patience and cunning are prime attributes.
- an ability to grow, to learn, and to perceive analogy across the information field.
- the capability of finding and fitting into a position in the current job market.

Is this too big an order? I personally don't think it is. But let me state briefly some of my assumptions as context. They are based on experience, observation, and prejudice, a state that, in my more manic moments, I like to call wisdom.

1. In its best sense librarianship as a profession is too important to be tied to the fate of a single institution. To be sure, the name itself-librarianship- carries a great deal of semantic baggage. Be that as it may, our society, as it moves toward an information-based society, will need the abilities inherent in librarianship.

2. This means that the profession of librarianship must cut its umbilical cord to the institution of the library. We must not be institution-bound. Libraries are part of a large information infrastructure. A failure to participate in the whole system will tend to isolate the library and the librarian even more than

they presently are from the blooming, dynamic, changing world out there.

3. Librarians, or whatever the label may be, must be able to move comfortably and capably from publishing to libraries to the information industry to community agency to museums to the myriads of information-based activities that have become the links of our knowledge society.

4. Traditionally the profession has been book-based - and I use the idea of the generic book here. These packages (forgive the word) have designed our systems. Though we pay lip service to "the user," the client, we really have not given him the attention that we give to the packages entering the system. I wish to suggest to you, if we really paid more attention to users and their needs, that we might not design a library in the conventional sense.

In fact, non-library systems and services in response to these needs are growing and developing all around us.

5. We need to recruit a different kind of student into the profession. As David Reisman has pointed out, the fastest way to change a profession is to change the kind of apprentice, i.e. student, who comes into it. Instead of letting students be self-selected on a past image of libraries, we should be looking for students who are both numerate and literate, who

already have a background in information technologies, economics, and research methods, and are bright, self-assured, and articulate. They are graduating from undergraduate schools, but they are not pounding on our doors. We need to ask why, for we have the potential of being the most exciting and challenging profession in the latter part of this century.

In these contexts, there appear to be six general subject areas of concern as a framework for curriculum design and development: information organization and retrieval; the information environment; information media; systems and technologies; research methods; and information management. Some may argue that this is too big an arena for a one-year professional program. That is a separate question which I am not prepared to address here. It does have something to say, however, about the kind of apprentice we admit to the profession.

I am unable to list the competencies and knowledges of each of these areas. For a beginning in that direction, I refer you to the paper I prepared on education and manpower two years ago for the National Commission on Libraries and Information Science.

These six areas may be looked at as organizing concepts; metaphorically, as strings along which we can push beads of different shapes, sizes, and colors. The beads are the

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examples we draw upon, the degrees of emphasis we place on particular processes, and the breadth or depth of a particular module or course or program. I will try to illustrate this in each area.

Information organization and retrieval has been a traditional focus in the profession. However, the organization of information has been dictated by the formats that come in the back door rather than by the needs of the people who surround us. We now need to relate the organization of information and our knowledge of information sources more closely to the natural processes of information-seeking and knowledge utilization.

The beads we have chosen so far are dictated by the formats, i.e. books and non-print packages, a very small corner of information in society. We need to add other beads, such as the organization and classification of highly dynamic information, for example, that needed by managers, legislators, doctors, and just plain people in the street. This competency is one of the unique capabilities of this profession. It has been diluted, however, by the obsessive concern for the minutia of the book, and the whole process of information, analysis and organization has been lost.

The second area, or string, of concern is the information environment, the history and context of knowledge and information processes in society. Today's world represents a convergence of many technologies and social forces to form a new human context -

sometimes called the knowledge society - based on the transfer and movement of messages in society. The antecedents for this go back many centuries, indeed millenia. In a very real sense, archives and libraries grew out of two major technological revolutions of mankind: the development of the alphabet and its recording; and the invention of printing. We are now in the midst of a third revolution, caused by the explosive growth of information and communication technologies.

The beads on this string are less well defined: it might even be said that the beads on this string are themselves examples of the need for better organization of information. We need, for example, a typology of those technologies that affect the information transfer process. We need a taxonomy of information agencies and industries, their structure, economics, and role. Above all, if we intend, as I am recommending, to concentrate more on people, we need to develop a taxonomy of information needs and uses, from survival to leisure, from decision-making to education, scholarship, and research. Thus the technologies, the agencies and industries, and the information needs of and uses by different populations are the beads on the environment string.

The third area, the study of information media is concerned with the format and intrinsic organization of messages. Though we are primarily concerned with long duration messages, i.e. those that can be stored and recalled at some future date, we



must realize that these messages exist and operate in a much larger sea of information. In addition to the linguistic messages - our normal concern - we must know something of the channels and peculiarities of other forms of aural and visual display..

The beads then on this string are the variety of media from print to sound to image; not only their physical characteristics but also the choices and functions of different media for different messages for different audiences. We must understand, as best we can, what it means to be<sup>b</sup> visually literate, and how that literacy relates to the organization and use of all media. We must be concerned with the languages used, with the shape, content, and reduction of messages; and with their internal organization.

The fourth area, systems and technologies, is concerned principally with the formal analysis and design of effective combinations of people, machines, and messages, the primary function of which is the movement of those messages. Here we should focus on the analysis, design, and evaluation of both operating and potential systems, which may range from (and these are some of the beads) library subsystems to broad band communication networks, from computer networks to management information systems. The focus of this area should emphasize the sense of process, of movement. Students should emerge from this area of study with some ability to understand what a system is, how it can be broken down and analyzed, and some skill in the special languages, e.g. computer programming.

The fifth area, research methods, is fairly obvious. However, I have one caveat. The principal concerns of this area for professional education are (a) to educate critical consumers of research results, especially in the social sciences and applied technology; and (b) to develop the ability to participate effectively in the design, analysis, and interpretation of relevant experiments and research. We are plagued with so-called research studies, which do little more than glut our journals and inflate our egos. A professional should be able to ask if sampling size and selection are appropriate, if the instrument is well structured, if the analysis and conclusions are justifiable, and, above all, so what? The beads on this string can range throughout the areas of statistics, probability, experimental design, and survey research. The critical concern, however, is to educate critical consumers and effective participants, not to turn out highly competent and original researchers.

The sixth area, management, in a sense ties all the other areas together. It is concerned with human behavior in organizational settings, with effective systems, with costs and budgeting, with the information context of the organization, with alternative structures, with policy and politics, and above all with the identification and definition of problems. The beads on this string can run from accounting systems to organizational behavior, from policy formation to marketing.

The examples can be drawn from libraries, the information and communications industries, or from the information management groups beginning to appear in many corporations. Though not all people have the potential for being "good" managers, there is a minimum which students should have - a sensitivity to the role and function of management in an organization, including the varieties of managerial style and their effectiveness.

This is a very brief and sketchy outline of six substantive areas of professional education. Now we cannot do all of it alone. However, a good portion of what I have suggested already exists in the schools represented here. The critical point is a change in attitude. We must cut our umbilical cord to the institution of the library. This is a rather scary decision to make, for it requires a good deal of faith in one's knowledge and confidence in one's ability to work in an open context. It means to be able to move in and out of different organizational contexts, without the security of a surrounding organizational structure known as a library.

Politically speaking, it is now too late to do this alone in the academic context, though it might have been possible twenty-five years ago. We now need to seek alliances, collaboration, merger, absorption (whatever the process may be labelled) with computer science, management, industrial engineering, public communication, and others who also have a

concern with the creation, production, dissemination, storage and retrieval of messages. Frankly, I rather doubt if schools concerned solely with the education of students whose only goal is to work in libraries can continue to exist as independent entities on a campus. The problems and concerns with knowledge transfer have become far too large and pervasive. And library schools have not grown with this societal and educational change.

Such changes do not come overnight. But I think the most important element in trying to identify a problem is to make the familiar strange. In a familiar world, libraries and related professional education are always right side up; we see them with our usual eyes and our usual assumptions. To this end, in these brief reminiscences about the future I have looked at the profession sideways, cross-eyed, upside down, so that we can begin to develop totally new perspectives and to build on a new set of assumptions. To be sure problem solving in the real world is messy and solutions may be traumatic. But I believe we have no choice if we as a profession are to survive and to prosper.

(1) Portions of this paper have been derived from three previous papers by the author. R.S. Taylor, Curriculum Design for Library and Information Science, School of Library Science, Syracuse University, August 1973 (Education and Curriculum Series #1); R.S. Taylor, "A Structure for Change in Education in the Information/Communication Field," Proceedings of the Annual Meeting of the American Society for Information Science, vol. 9, 1972: 147-153; and R.S. Taylor, Manpower and Educational Programs for Management Research, and Professional Growth in Library and Information Services, NCLIS, October 1974.